ShesTopALov K.S.

KOLESNIK, P.A.; MINKOV, T.Ye.; PAPMEL', S.V.; SHESTOPALOV, K.S.; LYZO, G.P., kandidat tekhnicheskikh nauk, redaktor; KOVALIKHINA, N.F., tekhnicheskiy redaktor.

[Textbook for automobile mechanics] Uchebnik avtomobil'nogo mekhanika. Pod obshchei redaktsiei G.P.Lyzo. Moskva, Avtotransizdat. Ministerstva avtomobil'nogo transporta i shosseinykh dorog SSSR, 1954. 467 p.
(Automobiles--Maintenance and repair) (MLRA 7:12)

SHESTOPALOV,K.S., inzhener; PRUSOV,V.V., inzhener

Field repair of road machinery during continuous road construction operations. Avt.dor.17 no.1:18-20 Jl-Ag'54. (MLRA 8:10)
(Road machinery--Maintenance and repair)

5

KOSHKAREV,V.A., inzhener; SHESTOPALOV,K.S.

Device for use in placing cement concrete road surfaces. Avt. dor.17 no.3:24-25 N-D'54. (MLRA8:10)
(Road machinery)

SHESTOPALOV, K.; PRUSOV, V.

Machine maintenance during continuous road construction. Avt.
transp. 32 no.3:12-15 Mr '54. (MLRA 7:8)
(Road machinery)

PRUSOV, Vsevolod Vasil'yevich; SHESTOPALOV, Konstantin Sergeyevich; KALUGIN, L.V., redaktor; MAL'KOVA, N.V., tekhnicheskiy redaktor

[Maintenance and repair of road machinery under field conditions] Tekhnicheskoe obsluzhivanie i remont dorozhnykh mashin v polevykh usloviiakh. Moskva, Nauchno-tekhn.izd-vo avtotransportnoi lit-ry, 1955. 78 p. (MLRA 9:2)

(Road machinery)

ZOZULYA, T.A.; MISHENKO, L.P.; SHESTOPALOV, K.S.; DANILEVSKIY, V.V., redaktor; KOGAN, F.L., tekhnicheskiy redaktor

[Repair of the MAZ-205 automobile] Remont avtomobilia MAZ-205. Moskva, Nauchno-tekhn. izd-vo avtotransp. lit-ry, 1955. 195 p.
(Automobiles--Repairing) (MLRA 8:6)

AFANAS'YEV, L.L., kandidat tekhnicheskikh nauk, redaktor; ILARIONOV, V.A.; STRUVE, N.E.; SHESTOPALOV, K.S.; BAUMAN, I.M., inzhener, redaktor; TIKHONOV, ~~A.Ya., tekhnich~~eskiy redaktor.

[Automobile mechanic's manual] Spravochnik avtomobil'nogo mekhanika. Pod obshchei red. L.L. Afanas'eva. Izd.2oe, perer. i dop. Moska, Gos.nauchno-tekhn.izd-vo mashinostroitel'noi lit-ry, 1955. 775 p. (MLRA 8:11)
(Automobiles--Handbooks, manuals, etc.)

SHESTOPALOV, Konstantin Sergeyevich; PUSHKAREV, Boris Aleksandrovich;
FLEROV,D.I., ofitsial'nyy retsenzent; RESHETNIKOV, N.S., ofitsial'nyy
retsenzent; DOMBROVSKIY, Yu.V., redaktor; GORYUNOVA, L.K., redaktor
izdatel'stva; SHITS, V.P., tekhnicheskiy redaktor

[Machine repairing at lumbering enterprises] Slesarno-remontnoe delo
na lesozagotovitel'nykh predpriiatiiakh. Moskva, Goslesbumizdat, 1956.
199 p. (MLRA 10:1)
(Machinery--Repairing)

SHESTOPALOV, Konstantin Sergeyevich; NIKITIN, A.G., redaktor; KOGAN, F.L., tekhnicheskiy redaktor.

[Automobile mechanic] Slesar' po obsluzhivaniiu i remontu avtomobilia. Moskva, Nauchno-tekhn.izd-vo avtotransp.lit-ry, 1956. 207 p. (MLRA 10:6)

(Automobiles--Maintenance and repair)

PLEKHANOV, Ivan Petrovich; CHERNYAYKIN, Vladimir Aleksandrovich; PAPMEL', Sergey Vladimirovich; SHESTOPALOV, K.S., redaktor; MAL'KOVA, N.V., tekhnicheskiy redaktor

[Truck driver's handbook] Spravochnik shofera. Moskva, Nauchno-tekhn.izd-vo avtotransp.lit-ry, 1957. 267 p. (MLRA 10:9)
(Motortrucks)

SHESTOPALOV, Konstantin Sergeyevich, inzh.; PAPMEL', S.V., red.; DOTSENKO, A.A., tekhn.red.

[Manual for amateur automobile mechanics] Spravochnik shofera-liubitelia. Izd.3-e, dop.o perer. Moskva, Gos.izd-vo "Fizkul'tura i sport," 1957. 301 p. (MIRA 11:1)

(Automobiles) (Automobile drivers)

SHESTOPALOV, Konstantin Sergeyevich,; ROGOZHIN, Aleksey Ivanovich,;
MOROZOV, Nikolay Dmitriyevich; MARTENS, S.L., red.; ZUYEVA, N.K., tekhn.red.

[Use and repair of automobiles] Ekspluatatsiia i remont avtomobilei.
Moskva, Nauchno-tekhn. izd-vo avtotransp. lit-ry, 1958. 319 p.
(MIRA 11:12)

(Automobiles)

AFANAS'YEV, L.L., kand.tekhn.nauk; ILARIONOV, V.A.; STRUVE, N.E.; SHESTOPALOV, K.S.; YEGORKINA, L.I., inzh., red.; UVAROVA, A.F., tekhn.red.

[Handbook for automobile mechanics] Spravochnik avtomobil'nogo mekhanika. Pod obshchei red. L.L.Afanas'yeva. Izd.3., perer. i dop. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 891 p. (MIRA 12:12)

(Automobile mechanics)

SHESTOPALOV, K.

Improve the training of drivers. Za rul. 17 no.11:9-10 N '59.

1. Starshiy inzhener Upravleniya voyenno-tekhnicheskoy podgotovki i sporta TSentral'nogo komiteta Vsesoyuznogo dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu SSSR.
(Automobile drivers)

KOMISSAROV, Nikolay Stepanovich, FILIMONOV, I.M., red.; SHESTOPALOV,
K.S., red.; FAYNSHMIDT, F.Ya., tekhn. red.

[Training in motor-vehicle driving under difficult conditions]
Obuchenie vozhdeniiu avtomobilia v trudnykh usloviiakh. Moskva,
Izd-vo DOSAAF, 1960. 118 p. (MIRA 15:7)
(Automobile drivers)

SHESTOPALOV, Konstantin Sergeyevich; FILIN, A.G., red.; NIKOLAYEVA, L.N., tekhn. red.

[Maintenance, and repair of motor vehicles; mechanic's manual] Tekhnicheskoe obsluzhivanie i remont avtomobilei; posobie slesariu. Moskva, Nauchno-tekhn. izd-vo M-va avtomobil'nogo transp. i shosseinykh dorog RSFSR, 1961. 198 p. (MIRA 14:7)

(Motor vehicles—Maintenance and repair)

SHESTOPALOV, K.S.; YEFREMOVA, Ye.V., red.; PLEKHANOV, I.P., red.

[Fitting and assembling work and the maintenance of a motor vehicle] Slesarno-montazhnye raboty i tekhnicheskoe obsluzhivanie avtomobilia. Moskva, DOSAAF, 1964. 267 p.
(MIRA 17:5)

MOROZOV, Nikolay Dmitriyevich; SHESTOPALOV, Konstantin Sergeyevich;
PLEKHANOV, I.P., red.

[Operation and repair of motor vehicles] Ekspluatatsiia i remont avtomobilei. Moskva, Transport, 1965. 336 p.
(MIRA 18:7)

MANUYLOV, K.N.; SHESTOPALOV, L.A.

AM-15 bimetallic soil thermometer. Trudy NIIGMP no.6:89-92
'58. (MIRA 12:2)
(Thermometers) (Soil temperature)

MANUYLOV, K.N.; AKSEL'ROD, G.S.; SHESTOPALOV, L.A.

Clock mechanisms for hydrometeorological instruments. Trudy NIIGMP no.8:90-98 '59. (MIRA 13:4)
(Meteorological instruments) (Clocks and watches)

SHESTOPALOV, L. A.

Bimetal feeler-type thermometer. Biul.tekh.-ekon.inform.Gos.nauch.-issl.inst.nauch. i tekh.inform. no.10:46-47 '62. (MIRA 15:10)

(Thermometers)

L 10803-63 EWT(1)/BDS--AFFTC/ASD/ESD-3--RB
ACCESSION NR: AP3000215 S/0050/63/000/005/0045/0050 59
58

AUTHOR: Bozhevikov, N. S.; Shestopalov, L. A.

TITLE: Basic characteristics and trends in the development of modern instruments for measuring the height of the lower limits of clouds

SOURCE: Meterologiya i gidrologiya, no. 5, 1963, 45-50

TOPIC TAGS: cloud-height indicator

ABSTRACT: Technical specifications of Soviet A-26 and "Oblako" cloud-height indicators are compared with similar Western equipment on the basis of trigonometric and pulse techniques. Table 1 of the Enclosure gives specifications for the Soviet instruments. Orig. art. has: 2 figures, 2 formulas and 2 tables.

Association: Scientific Research Inst. of Hydrometeorological Instruments.

Card 1/1

L 19574-63 EWT(1)/BDS AFFTC/ASD/ESD-3/AFWL RB/MLK(a)
ACCESSION NR: AP3008206 S/0286/63/000/013/0052/0052 ~~5~~ B

AUTHOR: Bozhevikov, N. S.; Shestopalov, L. A.; Tupitsy*n, O. V.

TITLE: Device for measuring the height of cloud cover. Class 42, No. 155639

12

SOURCE: Byulleten' izobreteniy i tovarny*kh znakov, no. 13, 1963, 52

TOPIC TAGS: cloud height measuring device, cloud cover height, quantum mechanical generator, generator, triangulated cloud cover height, meteorological instrument

ABSTRACT: The patent introduces a device for measuring cloud-cover height by the triangulation method. The device incorporates a quantum generator thereby increasing both the range and accuracy of the measurements.

ASSOCIATION: none

Card 1/2

L 19574-63
ACCESSION NR: AP3008206

SUBMITTED:	25Jun62	DATE ACQ:	21Oct63	ENCL:	00
SUB CODE:	AS	NO REF SOV:	000	OTHER:	000

Card 2/2

SHESTOPALOV, L.A.; ANTIPOV, S.F.

Thermometer for measuring the extreme and standard temperatures in the depth of a tillering node. Meteor. i gidrol. no.8:44-46 Ag '64 (MIRA 17:8)

1. Nauchno-issledovatel'skiy institut gidrometeorologicheskogo priborostroyeniya.

SHESTOPALOV, L.A.

Some results of the development and tests of the AM-15 bimetallic thermometer-probe. Trudy NIIGMP no.12:123-139 '64. (MIRA 18:4) [illegible], L.A.

Methods for compensating the scattering of the characteristics of thermobimetallic sensing elements. Trudy NIIGMP no.14:98-108 '65.
(MIRA 18:9)

CA

9

Two-chamber Siemens-Martin steel furnace. L. M. Shestopalov. Russ. 42,113, Mar. 31, 1935. Construction details.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

SHESTOPALOV, L.M.

Determination of the Mechanical Properties of Metals Using a Small Conical Indenter and a Shallow Scratch. F. F. Vitman, N. A. Zlatin, V. A. Stepanov, and L. M. Shestopalov (*Zhur. Tekhn. Fiziki*, 1954, 24, (3), 388-390). (In Russian.) A long critical review is given of non-destructive methods of determining the mech. properties of solids. Experiments were made to determine empirically the relationship between yield and fracture stress on the one hand and the hardness as determined by Vickers, Brinell, sclerometer, and scratch tests, on the other. Materials examined included Al, Cu, Fe, Duralumin, brass, and a variety of steels. The yield stresses range from 3 to 65 kg./mm.^{2}, but all fit the empirical formulæ within ~10%. Typical formulæ are: U.T.S. = $H_c(0\cdot32 \pm 0\cdot03)$ kg./mm.^{2} and "true" fracture stress = $(b^{-1}_{50} - 22\cdot5)(5\cdot75 \pm 0\cdot55)$ kg./mm.^{2}, where H_c is the load on a conical indenter divided by the area of the impression and b_{50} is the breadth (in mm.) of the scratch made by a conical scriber under a load of 50 g. Statistical considerations show that the relationships between the quantities measured are truly significant.—A. F. B.

SHESTOPALOV, L. M.

USSR, Physics - Metals, Mechanical Properties

FD 378

Card 1/1

Author : Vitman, F. F., Zlatin, N. A., Ioffe, B. S., Shestopalov, L. M.

Title : Determination of the mechanical properties of metals at elevated temperatures by means of a small conical indentation and a shallow scratch

Periodical : Zhur. tekh. fiz. 24, 549-559, Mar 1954

Abstract : Describes equipment for determining in vacuum mechanical properties of metals, demonstrating possibility of using method of small conical indentation for determining yield point and ultimate strength in the region of elevated temperatures. Establishes also that determination of tensile strength by means of short shallow scratches is infeasible at high temperatures. Seven references, all USSR; one 1935, others 1949-1952. Graphs, illustrations.

Institution :

Submitted : October 6, 1953

Shestopalov, L. M.

Met
Phys. Struct

ZHURNAL TEKHNICHESKOI FIZIKI

Journal of Technical Physics

Vol XXVI, No. 5, May, 1956

SHESTOPALOV, L. M.: On Calculating Stress Relaxation in Metals.

D

Stress relaxation in metals is a manifestation caused by internal reconstruction of the lattice of the real crystal which is in a non-equilibrium state; the mobility of the atoms in such a system decreases with increasing bond energy of the atoms and increases with increasing temperature. The load conditions impose the degree of thermodynamic non-equilibrium of the system on which the speed of attainment of the equilibrium state depends. The higher the deformation speed and deformation magnitude (in presence of strain hardening) the larger will be the deviation of the system from the equilibrium state and the larger will be the speed of reversion to equilibrium and consequently the faster will be the decrease in stress. This

1/2

On Calculating Stress Relaxation in Metals.

applies to metals and it applies approximately to thermally stable alloys. Phase transformations, recrystallization and other factors influencing the disturbance of the thermodynamic equilibrium of the system can also effect the process of stress relaxation but these are not considered in this paper.

VMH

LFH

SHESTOPALOV, L.M.

1-4E2c
4E4c
1-4E2b

ON THE COMPUTATION OF RELAXATION STRESSES IN METALS. L. M. Shestopalov. Soviet Physics - Tech. Physics, No. 5, 1957, pp. 998-1,009. Translation. Theoretical and experimental investigation of the phenomena. Analysis considers a real crystal which differs from the ideal crystal lattice by the presence of microscopic distortions such as vacant spaces, included atoms, and group distortions resulting from the presence of the former. It is shown that stress relaxation in metals is evidence of internal rearrangement of the lattice of a real crystal which is in a nonequilibrium condition; the mobility of the atoms in such a system is reduced with an increase of binding energy, and is increased with an increase in temperature.

RG MT

SOV/1759

PHASE I BOOK EXPLOITATION

14(10)

Shestopalov, Leonid Mikhaylovich

Deformirovaniye metallov i volny plastichnosti v nikh (Metal Deformation and Waves of Plasticity) Moscow, Izd-vo AN SSSR, 1958. 267 p. 3,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Fiziko-tekhnicheskiy institut.

Resp. Ed.: N.N. Davidenkov, Professor, Active Member UkrSSR Academy of Sciences; Ed. of Publishing House: A.A. Orolov; Tech. Ed.: R.A. Arons.

PURPOSE: This book may be of interest to scientific workers and industrial engineers concerned with the mechanics of materials and metal processing.

COVERAGE: In this book problems of the mechanical characteristics of metals as related to the duration and velocity of loading and to temperatures are considered. A brief survey of bibliography related to the problem is given. Some general laws of plastic deformation of metals under small (static) and large (dynamic) loading-velocities are established. Results of the author's experimental investigation of nonelastic dynamic loading of metals are given;

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experimental data are analyzed on the basis of the general considerations developed by the author on the existence of a mechanism of irreversible displacements of atoms inside the crystal lattice when subjected to action of the external field of forces. Other problems of the mechanics of materials are also considered. The book was edited by a member of Academy of Science of USSR, Prof. N.N. Davidenkov. There are 82 references, of which 27 are Soviet, 45 English, 5 German and 5 others.

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AVAILABLE: Library of Congress

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Card 4/4

SOV/126-6-4-23/34

AUTHORS: Belogurov, B.V.,
Shestopalov, L.M.

TITLE: Variation of the Specific Heat of Metals During Plastic Deformation (Izmeneniye teployemkosti metallov pri plasticheskom deformirovanii)

PERIODICAL: Fizika Metallov i Metallovedeniye, 1958, Vol 6, Nr 4, pp 734-738 (USSR)

ABSTRACT: Unlike various other effects, the effect of plastic deformation on the specific heat of metals has not been extensively studied. The few investigations that have been reported in the literature (Ref.1-8) were carried out under conditions bound to lead to erroneous results and the published data are often contradictory. Prompted by this consideration and by the fact that useful information on the character of the lattice distortions and on the variation of the atomic bond forces might be obtained from accurate data of this nature, the present author investigated the relationship between the variation of the specific heat, C, of steel and copper and the degree of plastic deformation (both in tension and compression). Armco iron and electrolytic,

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Variation of the Specific Heat of Metals During Plastic Deformation

vacuum melted copper were used in the experiments carried out in the 20-50°C temperature interval, i.e. well below the recrystallisation temperatures of these metals. Since the energy stored up in the specimens might affect the results of the calorimetric measurement by decreasing their heat capacity, the test pieces were subjected to a preliminary treatment consisting of 2 hrs at 70°C. A differential, direct heating type, vacuum calorimeter shown in Fig.1 was used to detect and measure the variation of C. The cylindrical test pieces were heated by flat electrodes held tightly against their ends by textolite cones. Pilot test pieces were prepared from annealed materials. The Nichrome-Constanan thermocouples ($d\varepsilon/dt = 44\ \mu V/^{\circ}C$) used for measuring the temperature of both the investigated specimen, and the pilot test piece were connected in such a manner that it was possible to get a direct reading of the value of $\Delta C/C\%$. Since it had been shown that variation of the surface area of the test pieces subjected to deformation of more than 10%

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Variation of the Specific Heat of Metals During Plastic Deformation

affected significantly the experimental results, the deformation interval covered by the investigation was limited to ±10%. Although the calorimeter was capable of registering variations of C of the order of 0.01%, the accurately recorded variations were not less than 0.1%. A vacuum of 10^{-2} mm Hg was sufficient to ensure satisfactory results. The experimental materials were annealed by holding for 12 hrs at 800°C (iron) or 600°C (copper) and cooling in the furnace. Before loading in the calorimeter, the mass of the test piece (22 mm diameter, 38 mm long, weighing 112 g) was made equal to that of the pilot specimen with the accuracy of 1 mg (0.001%). The surfaces of the specimens and the internal walls of the calorimeter were polished to improve their reflectivity. The heat losses were minimised by coaxial arrangement of the test pieces in the cylindrical calorimeter. Since no fewer than 100 test pieces were investigated for each metal and each type of deformation, in all not less than 400 experiments were carried out. (These were checked by experiments carried out with the aid of a mass calorimeter designed

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Variation of the Specific Heat of Metals During Plastic Deformation

by Popov and Skuratov (Ref. 9) which, however, proved to be less sensitive and less accurate.) The graphs showing $\Delta C/C$ as a function of the deformation, ε, are reproduced in Fig.2 (copper in compression), 3 (copper in tension), 4 (iron in compression) and 5 (iron in tension). It can be seen that plastic deformation both in compression and tension results in an increase of the specific heat C. In the case of copper, this increase begins at 2.5% deformation and reaches the saturation point at 10% deformation. The average value of the maximum increase is 0.5%. In the case of iron, C begins to increase at 1% deformation, the maximum increase being approx 1.0%. Graphs showing the effect of plastic deformation on the strength of copper (Taylor and Quinney Ref.10), on the residual stresses determined from the variation of the $K\alpha$ doublet (Davidenkov and Terminasov, Ref.11), and on the energy absorption (Degtyarev, Ref.13) are reproduced in Figs.6, 7 and 8 respectively. Not only are these curves similar in form to those shown in Fig.2-4, but the saturation point is also reached in

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87903

S/181/60/002/012/009/018
B006/B063

18 7500 1555

AUTHORS: Shestopalov, L. M. and Romashkin, Yu. P.

TITLE: Diffusion of Silver in Plastically Deformed Copper

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 12, pp. 2998-1308

TEXT: This is a report on measurements of the volume diffusion rate for coarse-grained, plastically deformed copper of the type M-1 (M-1). Ag^{110} with a specific activity of about 100 mC/g was used as diffusing substance, and two methods were applied: 1. removal of layers with nitric, ortho-phosphoric, and glacial acetic acids; 2. diffusion absorption by the use of gamma and beta rays. The copper specimens were cylinders 5 mm high and 5-8 mm in diameter, which were subjected to heat treatment in a vacuum of $10^{-3}-10^{-4}$ mm Hg, deformed at 600°C with a special machine under constant compression, and finally cooled. The change of the creeping rate during deformation from 0 to 2000% per hour at 600°C, which was applied to obtain a 50% deformation, caused a change of the diffusion coefficient. The diffusion coefficient, D, of silver was found to increase linearly:

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87903

Diffusion of Silver in Plastically Deformed Copper

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$D/D_0 = 1 + K\dot{\varepsilon}$, $\dot{\varepsilon}$ is the deformation rate; $K = 1.1 \cdot 10^3$ if $\dot{\varepsilon}$ is expressed in percent, and $4 \cdot 10^3$ if $\dot{\varepsilon}$ is expressed in sec^{-1}. The determination of D/D_0 has an error of 50-70%, as was shown by measurement of the beta and gamma activities of Ag^{110} with an end-window counter of the type MCT-17 (MST-17). The intensity ratio i_β/i_γ was found to be 12.2. The measured values are spread on either side of the straight line representing D/D_0 as a function of $\dot{\varepsilon}$. The spread is, however, within the limits of accuracy. It was shown that for a given deformation rate, the increase of the diffusion rate decreases with a decrease of deformation. There are 9 figures and 6 references: 5 Soviet and 1 US.

X

ASSOCIATION: Fiziko-tekhnicheskiy institut AN SSSR Leningrad (Institute of Physics and Technology of the AS USSR, Leningrad)

SUBMITTED: April 5, 1960

Card 2/2

87907

S/181/60/002/012/007/018
B006/B063

18.8200
10.9210

AUTHORS: Romashkin, Yu. P. and Shestopalov, L. M.

TITLE: Study of Diffusion on Boundaries Appearing in Creeping of Copper

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 12, pp. 3029-3039

TEXT: The present paper is a very detailed report on a study of diffusion in creeping tests. The following results were obtained: 1. Compression creeping tests (with σ = const) up to a deformation of $\varepsilon = 50\%$ between 400 and 900°C and variation of the deformation rate ($0 \le \dot{\varepsilon} \le 2000\%$/hour) have shown that the creeping rate increases quickly after a critical deformation ε_{cr} has been surpassed. 2. Qualitative microscopic examinations have shown that a new system of grain boundaries is formed in the material during deformation. The extension of these boundaries and ε_{cr} depend on the deformation temperature (with ε = const, $\dot{\varepsilon}$ = const) in almost the same manner. From this, it is concluded that the desorientation of grains during deformation and the creeping rate increase

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Study of Diffusion on Boundaries Appearing in
Creeping of Copper

considerably. To check this assumption, diffusion experiments were made with silver, and the grain size and desorientation were determined by removal of layers and by evaluating the curves according to Fisher. Diffusion experiments carried out at 600°C with specimens previously deformed at different temperatures up to $\varepsilon = 50\%$ and ε = const showed that such a material exhibits grains that are finer than the initial ones. The extension of the initial grain boundaries decreases with a rise in temperature of the previous deformation to the same extent as ε_{cr}. The degree of desorientation of these grains is independent of the deformation temperature. Diffusion experiments performed at 600°C with specimens previously deformed at 600°C up to ε -values of 2-50% showed that the grain size is almost independent of ε while their desorientation increases considerably with ε. Diffusion experiments carried out at 600°C with specimens which had been deformed simultaneously at σ = const in different degrees, showed that also in this case the grain size depended only slightly on ε. For these experiments it could not be assumed that the volume diffusion rate remains constant. However, the results indicated that D_{vol} increases with ε; the increase of D_{vol} agreed with the value

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Study of Diffusion on Boundaries Appearing in Creeping of Copper

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B006/B063

obtained in previous experiments (Ref. 9). All experiments have shown that deformation creates new grains in the material, the size of which depends only slightly on ε while their desorientation increases quickly with ε. D_{vol} increases if $\varepsilon \geq \varepsilon_{cr}$. At an angle of desorientation corresponding to ε_{cr}, the nature of interaction between intragranular defects and grain boundaries changes such that the mean defect density in the grain increases. This fact is held responsible for the quick increase of the creeping rate and for the increase of the volume diffusion rate with $\varepsilon \geq \varepsilon_{cr}$. There are 8 figures and 9 references: 2 Soviet, 2 French, 3 US, and 2 British.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN SSSR, Leningrad (Institute of Physics and Technology AS USSR, Leningrad)

SUBMITTED: April 27, 1960

Card 3/3

31855
S/032/62/028/001/013/017
B116/B108

18.7500

AUTHORS: Romashkin, Yu. P., and Shestopalov, L. M.

TITLE: Pressure tests at constant load and study of diffusion during creep

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 1, 1962, 95 - 97

TEXT: A procedure was worked out for measuring the diffusion coefficient D in samples deformed by pressure during diffusion annealing. A relationship between σ and $\bar{\varepsilon}$ (mean deformation rate during the test) at 400 - 900°C was derived for М-1 (M-1) copper. The rate at which silver at 800°C diffused into plastically deformed copper (0 - 1200% per hour) was measured. Within limits of error, diffusion was not accelerated. This indicates that the acceleration of diffusion decreases sharply with increasing temperature. The machine designed by the authors permits (1) deforming the sample in vacuo as much as possible at increased temperature; (2) varying the load on the sample over a wide range, and keeping the load constant during deformation; and (3) varying the deformation rate over a wide range. The furnace operates with a sufficiently high vacuum

Card 1/4

31555
S/032/62/028/001/013/017
Pressure tests at constant load... B116/B108

(10^{-3} mm Hg). For greater convenience of measuring D, one side face of the cylindrical samples was cut plane ($r = 2.5 - 5$ mm, $h_0 = 5$ mm). The samples were annealed (grain size 3 mm) for 2 hrs at 800°C and for 5 hrs at 950°C, and were then chemically polished. A thin silver layer ($10^{-5} - 10^{-6}$ mm) containing the Ag^{110} radioisotope was then applied to the side face of the sample. The samples were heated, and loaded in a vacuum. The furnace was turned off after a 50% deformation was reached. For determining D, layers were taken from the cooled sample, and the β- and γ-intensities were determined. In this way, the relationship between σ and $\dot{\varepsilon}$ was obtained (Fig. 3). The concentration distribution of the silver diffusing into the copper at 800°C was measured, and D was calculated from the curves obtained (Table). There are 4 figures, 1 table, and 2 Soviet references.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe Akademii nauk SSSR (Physicotechnical Institute imeni A. F. Ioffe of the Academy of Sciences USSR)

ROMASHKIN, Yu.P.; SHESTOPALOV, L.M.

Methods for compression tests under constant stress with the study of diffusion in the process of creep. Zav.lab. 28 no.1:95-97 '62. (MIRA 15:2)

1. Fiziko-tekhnicheskiy institut im. A.F.Ioffe AN SSSR.
(Creep of metals)

L 58404-65 EWP(e)/EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b) Pf-4 IJP(c)
ACCESSION NR: AP5016930 JD/JG UR/0089/65/018/006/0608/0616
546.45.001.2

44
42
B

AUTHOR: Davidenkov, N. N. (Deceased); Sidorov, B. A.; Shestopalov, L. M.; Mironov, N. F.; Bogorad, N. M.; Izhvanov, L. A.; Kostogarov, S. B.

TITLE: Investigation of the mechanical properties of beryllium 16 27

SOURCE: Atomnaya energiya, v. 18, no. 6, 1965, 608-616

TOPIC TAGS: beryllium, sintered beryllium, cast beryllium, extruded beryllium, beryllium mechanical property 16

ABSTRACT: Beryllium powders, 99.02—99.59% pure with a particle size of -500 or -50 μ, obtained by reduction of beryllium fluoride with magnesium, vacuum distillation, or electrolysis of beryllium chloride, were consolidated by cold compacting and vacuum sintering, hot compacting in air or in a vacuum, or by melting and centrifugal casting. A part of the specimens was additionally extruded at 450—500C with a reduction of 75%. The density of metal varied from 1.75—1.82 g/cm^2 for cold-compacted and sintered specimens to almost the theoretical for hot-compacted or extruded specimens. It was found that at 20C the elongation and reduction of area did not exceed 5%. The ductility of sintered beryllium increased sharply with increasing temperature to a maximum at 400—500C, and then decreased. The strength and ductility of hot-compacted beryllium powders increased with decreasing particle

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L 58404-65

ACCESSION NR: AP5016930 2

size. Electrolytic and distilled beryllium is more ductile than that obtained by reduction with magnesium. Beryllium extruded from hot-compacted powders with a grain size of -50 μ (the mean grain size 20—25 μ) had the highest strength and ductility at both room and elevated temperatures (up to 600C). For example, at room temperature the tensile strength was 45 kg/mm^2, the true tensile strength—48 kg/mm^2, the elongation—3.6% and the reduction in area—4.0%; at the temperature of maximum ductility, the elongation and reduction of area was 60 and 66%, respectively. Mechanical properties of sintered and of hot-compacted beryllium differed only slightly. But, generally, nonextruded, sintered and hot-compacted beryllium had comparatively low strength and ductility. However, after extrusion, the strength and ductility increased by 2—3 times; the yield strength increase was less pronounced. Cast beryllium was more brittle than beryllium prepared by the powder-metallurgy method; it remained brittle even with heating to 400C. The values of the strength and ductility obtained in compression tests were noticeably higher than those obtained in tension tests. Orig. art. has: 14 figures and 2 tables. [MS]

ASSOCIATION: none

SUBMITTED: 12Jun64 ENCL: 00 SUB CODE: MM, IC

NO REF SOV: 003 OTHER: 006 ATD PRESS: 4042

Card 2/2 dap

ACC NR: AP6027800 SOURCE CODE: UR/0126/66/022/001/0157/0158

41
5

AUTHOR: Konstantinov, B. P.; Zimkin, I. N.; Stepanov, M. I; Shestopalov, L. M.

ORG: Physicotechnical Institute im. A. F. Ioffe, AN SSSR (Fiziko-tekhnicheskiy institut AN SSSR)

TITLE: Hardening of steel surface by wire explosion

SOURCE: Fizika metallov i metallovedeniye, v. 22, no. 1, 1966, 157-158

TOPIC TAGS: ~~steel~~ metal hardening, ~~steel~~ surface hardening, wire, ~~explosion,~~ ~~explosive hardening~~ steel

ABSTRACT: Copper or steel wire, 0.38—0.4 mm in diameter and 40—50 mm long, placed 10 mm above the face of a cylindrical U8A steel specimen was exploded by a current pulse produced by the discharge of a capacitor. As a result of this explosion, the surface microhardness increased from the original 170—200 kg/mm^2 to 950—1200 kg/mm^2. Although the average thickness of the hardened layer was 20—30 μ, it was uniform and varied from 0 to 60 μ. X-ray diffraction patterns showed that the surface layer contained up to 70% austenite, the rest being mostly ferrite with no significant quantity of martensite. It could be that the metal surface was decarbonized, or the ferrite had no time to

Card 1/2 UDC: 621.785.5

ACC NR: AP6027800

change to austenite, or the high rate of cooling preserved δ ferrite. The block size in the hardened layer was about 450 Å. [ND]

SUB CODE: 11, 13/ SUBM DATE: 23 Sep65/ OTH REF: 001/ ATD PRESS: 5062

Card 2/2

BELYAYEV, Naum Zinov'yevich; SHLEZINGER, Mikhail Yur'yevich; FILIMONOV,
I.M., red.; SHESTOPALOV, L.S., red.; KARYAKINA, M.S., tekhn.
red.

[Manual for automobilists] Uchebnoe posobie shoferu-liubiteliu.
Moskva, Izd-vo DOSAAF, 1961. 222 p. (MIRA 14:8)
(Automobiles) (Traffic regulations) (Automobile racing)

SHESTOPALOV, N.F.

Automatic return of tunnel kiln cars. Ogneypory 28 no.2:68-70 '63.
(MIRA 16:2)

1. Konstantinovskiy ogenupornyy zovod "Krasnyy Oktyabr'".
(Refractory materials) (Kilns—Equipment and supplies)
(Automatic control)

SHESTOPALOV, N.F.

Automatic weighing of the batch. Ogneupory 28 no.10:454-455 '63. (MIRA 16:11)

1. Konstantinovskiy ogneupornyy zavod "Krasnyy Oktyabr'".

[illegible]

[illegible] kiny gruz. rem. Prof.-tekh.obr. 22 no.4:16-17
'65. (MIRA 18:5)

1. [illegible]l'skoye professional'no-tekhnicheskoye uchilishche No.4, [illegible]skoy obl.

[illegible]

[illegible]

[illegible]

[illegible] MIRA 16:1)

[illegible] Vostoka (for Lipman).

SHESTOPALOV, I.I., inzh.; [illegible] inzh.; FILATOVA, G.F.,
inzh.; GROMOV, I.V., nauchn.sotr.; STEPANOVA, I.N., red.

[Fishing in the Amur River] Rybolovstvo na Amure. Vladivostok, TSentr. biuro tekhn. informatsii, 1962. 103 p.
(MIRA 18:1)

1. Amurskoye otdeleniye Tikhookeanskogo instituta rybnogo khozyaystva (for Gromov).

SHESTOPALOV, P.P.

How to make an electric map. Geog. v shkole no.2:57-58 Mr-Ap '53.
(MLRA 6:5)
(Maps)

ZMEUL, S., kand.arkhitektury; SHESTOPALOV, V., arkhitektor

New model plans for schools and children's institutions.
Na stroi. Ros. no.5:5-7 My '61. (MIRA 14:7)
(Schoolhouses—Designs and plans)
(Kindergartens—Designs and plans)
(Nursery schools—Designs and plans)

AID P - 1518

Subject : USSR/Electricity

Card 1/1 Pub. 26 - 14/36

Author : Shestopalov, V. I., Eng.

Title : Discussion of the article "Electrical connection diagrams for hydroelectric power stations" by D. A. Bashlay and Yu. I. Ivanov (Elek. sta., 1954, No.2)

Periodical : Elek. sta., 3, 42-43, Mr 1955

Abstract : The author is of the opinion that the diagram for the supply of the station's own power needs as presented by the authors of the article discussed are very seldom used at the present time. It requires large costs for the equipment of the step-down 220 ÷ 110/6 kv transformer and is costly in operation. The author proposes different solutions of the problem. Three connection diagrams

Institution: Ministry of Construction of Electric Power Stations

Submitted : No date

SHESTOPALOV, V.I., inzhener.

Simplification of temporary step-down substations at construction sites. Elek.sta. 27 no.5:53-54 My '56. (MLRA 9:8)
(Electric substations)

SHESTOPALOV, V.I.

Method for connecting metal gutters. [Suggested by V.I.Shestopalov.]
Rats.i izobr.predl.v stroi.no.144:30-31 '56. (MLRA 10:2)
(Gutters)

SHESTOPALOV, V.I.

Mechanization of rail measurement. Put' i put.khoz. no.12:17-19 D '58.
(MIRA 12:1)
(Railroads--Rails) (Measuring instruments)

KAZMIRENKO, F.L., inzh.; SHESTOPALOV, V.I., inzh.

Simplified 110 kv step-down transformer substation. Mekh. i elek.sots.sel'khoz. 17 no.3:42-44 '59. (MIRA 12:8)

1. Vsesoyuznyy gosudarstvennyy institut po proyektirovaniy elektrifikatsii sel'skogo khozyaystva.

(Electric transformers)

KARPOV, N.A., kand.tekhn.nauk; SHESTOPALOV, V.I.

Improving the electric vibratory tie tamper. Trudy TSNII MPS
no.178:71-78 '59. (MIRA 13:4)
(Railroads--Equipment and supplies)

PILYUTIK, N.G., inzh.; SHESTOPALOV, V.I., inzh.

Efficient grounding devices for rural low-voltage networks.
Mekh. i elek. sots. sel'khoz. 19 no.3:50-52 '61. (MIRA 14:6)

1. Vsesoyuznyy gosudarstvennyy institut po proyektirovaniyu
elektrifikatsii sel'skogo khozyaystva.
(Electric currents—Grounding)

KAZMIRENKO, F.L., inzh., Prinimal uchastiye SHESTOPALOV, V.I.

How to reduce construction costs of rural low-voltage lines.
Mekh.i elek.sots.sel'khoz. 19 no.5:50-51 '61. (MIRA 14:10)

1. Vsesoyuznyy gosudarstvennyy institut po proyektirovaniyu elektrifikatsii sel'skogo khozyaystva.
(Electricity in agriculture—Costs)

SHVED, Anatoliy Petrovich; SHESTOPALOV, Vadim Il'ich; KLEMENT'YEV, A.V., red.; SERGEYEV, D.I., red.izd-va; USANOVA, N.B., tekhn. red.

[Experience in the operation of power plants on ships of the type "Leninskii komsomol"] Opyt ekspluatatsii silovykh ustanovok sudov tipe "Leninskii komsomol." Moskva, Izd-vo "Morskoi transport," 1962. 177 p. (MIRA 16:6)
(Steam turbines, Marine)

KARPOV, N.A., kand.tekhn.nauk; SHESTOPALOV, V.I.

Electric vibratory tie tamper. Put' i put.khoz. 7 no.1:34-37 '63.
(MIRA 16:3)

(Railroads--Electric equipment)

KARPOV, N.A., kand. tekhn. nauk; SHESTOPALOV, V.I.

Eliminate the shortcomings of the equipment for track alignment.
Put' i put. khoz. 7 no.11:21-22 '63. (MIRA 16:12)

SHESTOPALOV, V.I., inzh.; KIRILLOV, M.I., inzh.

Automatic operative disconnecting of a 110 kv. substation by a disconnector. Elek.sta. 34 no.2:86-87 F '63. (MIPA 16:4)
(Electric cutouts) (Electric substations)

KARPOV, N.A., kand. tekhn. nauk; SHESTOPALOV, V.I.

Improved tie tamper. Put' i put. khoz. 9 no.1:14-16 '65
(MIRA 18:2)

SHESTOPALOV, V.K.

Packing refractory brick. Ogneupory 26 no.7:308-309 '61.
(MIRA 14:7)

1. Krasnoarmeyskiy dinasovyy zavod im. Dzerzhinskogo.
(Firebrick)
(Packing for shipment)

SHESTOPALOV, V.K.; PETRINA, G.A.

Grooved car bottoms for tunnel kilns. Ogneupory 27
no.12:568-569 '62. (MIRA 15:12)

1. Dinasovyy zaovd im. Dzerzhinskogo.
(Kilns--Equipment and supplies)
(Firebrick)

SHESTOPALOV, V.M.

Combined frequency relays. Avtomatyka no.4:39-47 '56.
(MLRA 10:2)

1. Institut elektrotekhniki AN URSR.
(Electric relays)

SHESTOPAL, V.M., doktor tekhn. nauk

International symposium on the reduction of air pollution in foundries. Lit. proizv. no.12:42 D '65. (MIRA 18:12)

SHESTOPALOV, V. M.

"Development and Investigation of a Device for Artificial Damping of Oscillations in a Long-Distance Transmission System with Intermediate Generator Stations." Cand Tech Sci, Inst of Electrical Engineering, Acad Sci Ukrainian SSR, Kiev, 1955. (KL, No 9, Feb 55)

SO: Sum. No. 631, 26 Aug 55-Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (14)

Subject : USSR/Electricity AID P - 1606

Card 1/1 Pub. 27 - 15/27

Authors : Inosov, V. L, Doc. of Tech. Sci., Shestopalov, V. N., Eng., and Rybinskiy, V. Ye., Eng.

Title : Arrangement for the measurement of the coasting angle of a synchronous machine

Periodical : Elektrichestvo, 3, 70-72, Mr 1955

Abstract : The authors designed an arrangement to measure the relative angles between the emf vectors of the generators at the various electric power stations of an electric power system. They describe the structure and functioning of the arrangement. Two diagrams

Institution: Electrical Engineering Institute of the Academy of Sciences of the USSR

Submitted : Ag 24, 1954

SHESTOPALOV, V.N., kand. tekhn. nauk.

Phase plane determination of the possibility of resynchronizing a synchronous motor. Elektrichestvo no.12:14-18 D '56. (MIRA 11:3)

1. Institut elektrotekhniki AN USSR.
(Electric motors, Synchronous)

SHESTOPALOV, V.N.

Braking control of generators in the transient state after repairing in electric stations for long-distance transmission. Sbor.trud. Inst. elektrotekh.AN URSR no.13:42-66 '56.
(MLRA 9:10)

(Electric generators) (Electric power distribution)

SHESTOPALOV, V.N.

Determining the optimum dimensions of a magnetic amplifier with a core in the shape of the letter LLI. Sbor.trud. Inst. elektrotekh.AN URSR no.13:146-152 '56. (MLRA 9:10)

(Magnetic amplifiers)

[illegible]

SHESTOPALOV, V.N. , kand.tekhn.nauk.

Centralized circular control. Elek.sta. supplement no.6:22-26
N-D '57. (MIRA 11:2)
(Remote control)

SHestopalov, V.N.

8(6); 28(1)

PHASE I BOOK EXPLOITATION

SOV/2497

Akademiya nauk Ukrainskoy SSR. Institut elektrotekhniki.

Voprosy ustoychivosti i avtomatiki energeticheskikh sistem (Problems in Stability and Automation of Power Systems) Kiyev, Izd-vo AN UkrSSR, 1959. 186 p. (Series: Its: Sbornik trudov, vyp. 16) Errata slip inserted. 4,000 copies printed.

Ed. of Publishing House: T. K. Remeznik; Tech. Ed.: N. P. Rakhlina; Editorial Board: A. D. Nesterenko, Corresponding Member, Ukrainian SSR Academy of Sciences (Resp. ed.), S. A. Lebedev, Academician, S. I. Tetel'baum, Corresponding Member, Ukrainian SSR Academy of Sciences, A. N. Milyakh, Doctor of Technical Sciences, Ye. V. Khrushcheva, Candidate of Technical Sciences, and L. V. Tsukernik.

PURPOSE: This collection of articles was published in line with a directive of the scientific council of the Electrical Engineering Institute, Academy of Sciences, UkrSSR. It is intended for scientific engineering and technical personnel concerned with problems of stability and automatic control of power systems.

COVERAGE: The authors analyze static stability of a complex power system, taking into account automatic control and load characteristics. They discuss transients in a compensated network during short-circuiting to ground and describe metloads of calculating transients in current transformers. They also consider basic features of calculating current transformers with magnetizing and discuss linear theory of magnetic amplifiers as well as new types of frequency relays and frequency measuring devices. No personalities are mentioned. References appear at the end of each article.

Kubyshin, B.Ye. Problems of a Linear Theory of Magnetic Amplifiers 113

The author shows that a magnetic amplifier should be considered as a current or voltage generator controlled with d-c, a-c or pulse currents or voltages with a frequency lower than that of the magnetizing current.

He discusses equivalent circuits of magnetic amplifiers and derives expressions for amplifier parameters. There are 7 references, all Soviet (including 1 translation).

Kostyuk, O.M. Current transformers with D-C Magnetization and Basic Aspects of Calculating Transformers Used in Circuits for Automatic Field Regulation of Synchronous Generators 135

The author discusses a graphic-analytical d-c magnetization used in circuits for automatic field regulation of synchronous machines. There are 8 references: 6 Soviet, 1 English and 1 German.

CIRCUITS, DEVICES AND EXAMPLES OF CALCULATIONS 153

Kachanova, N.A. and L.V. Tsukernik. Analysis of Static Stability of a Long-distance Transmission Line, Taking Into Account Complex Load Characteristics 153

The authors study the effect of voltage and frequency static characteristics of a complex load as well as the effect of dynamic characteristics of an equivalent induction motor on the stability of a long-distance power transmission line. They conclude that the dependence of load conductance on voltage is the major factor affecting stability. There are 6 references, all Soviet.

Shestopalov, [illegible] Device for Measuring Frequency 164

The author discusses an electronic device for frequency measurement by measuring the duration of a certain number of periods. The number of periods is counted by means of a trigger circuit similar to that used in computers. The duration is determined with the aid of a vacuum-tube generator stabilized by means of a tuning-fork electromechanical frequency transducer. Measurements obtained with the aid of the device are sufficiently accurate in the wide range of radio frequencies. There is 1 Soviet reference.

Kubyshin, B.Ye. Method of Calculating Magnetic Amplifiers on the Linear Theory 174

The author considers methods of selecting operating conditions for amplifiers and determing coefficients required in calculations. He presents a numerical example of calculating a magnetic amplifier for contactless power commutation. There is 1 Soviet reference.

AVAILABLE: Library of Congress

(5

KACHANOVA, N.A.; SHESTOPALOV, V.N.

Temporary unloading of the receiving system as a means for increasing stability. Sbor. trud. Inst. elektrotekh. AN URSR no.16:77-86 '59. (MIRA 12:9)
(Electric power distribution) (Electric relays)

SHESTOPALOV, V.N.

Frequency-measuring device. Sbor. trud. Inst. elektrotekh. AN URSR no.16:164-173 '59. (MIRA 12:9)
(Frequency measurements)

SHESTOPALOV, V.N.

Unit for measuring frequencies. Izm. tekh. no. 6:49-50 Je '60.
(MIRA 13:2)

(Frequency measurements)

SHESTOPALOV, V.N. [Shestopalov, V.M.] (Kiyev)

Measurement of the speed of relative motion. Avtomatyka 8 no.4:68-70 '63. (MIRA 16:10)

INOZEMTSEV, O.S.; TSYGANKOVA, L.G.; SHESTOPALOV, V.N.

Transmitting device of a multiple-message remote control system. Trudy Inst. elektrotekh. AN URSR 20:175-189 '63. (MIRA 17:11)

[illegible]

Theory of a multiple-message remote control system. Trudy Inst. elektrotekh. AN URSR 20:137-174 '63.

(MIRA 17:10)

BUSLOV, L.I.; KOVALENKO, V.P.; SHESTOPALOV, V.N.

Receiving device of a multiple-message remote control system.
Trudy Inst. elektrotekh. AN URSR 20:190-197 '63.
(MIRA 17:11)

ROYZEN, V.V., inzh.; SHESTOPALOV, V.N., inzh.; SHCHELKUNOVA, A.M.

Standard water drainage equipment in Krivoy Rog Basin mines.
Shakht. stroi. 9 no.3:17-19 Mr '65. (MIRA 18:7)

1. Trest po proyektirovaniyu zhelezorudnykh predpriyatiy
Krivorozhskogo basseyna "Krivbassproyekt."

GAVRILENKO, L., kandidat tekhnicheskikh nauk; KATKHE, O., inzhener.
SHESTOPALOV, V.P, inzhener; CHAMORTSEV, I., inzhener.

Ways of decreasing the consumption of lubricating oils in 8DR 43/61 engines. Mor.flot. 16 no.1:26 Ja '56. (MLRA 9:5)

1. Odesskiy institut inzhenerov morskogo flota (for Katkhe);
2. Chernomorskoye parokhodstvo (for Shestopalov, Chamortsev).
(Lubrication and lubricants) (Diesel engines)

Mathematical Reviews
Vol. 14 No. 7
July - August, 1953
Mechanics.

Šestopalov, V. P. On a particular solution for a heated boundary layer in a diffusor. Akad. Nauk SSSR. Prikl. Mat. Meh. 16, 613-616 (1952). (Russian)

Consideration is given to the laminar, incompressible, thermal boundary layer developed near the leading edge of a wedge. Applying the known solution for the velocity boundary layer, the thermal equation including the effects of viscous dissipation is reduced by suitable change of independent variable to the ordinary hypergeometric differential equation. The formal solution of this in the general case considered is set forth. As the hypergeometric function parameters depend algebraically on the thermal diffusivity of the fluid, a treatment of a numerical solution by use of a few terms in the series is considered for a special application and shown to be satisfactory. *N. A. Hall.*

USSR/Electronics - Waveguides, Traveling-Wave Tubes Mar 52

"The Theory of a Waveguide Enclosing a Spiral Partially Filled With a Dielectric (For the Case of Arbitrary Dielectric Constants)," V. P. Shestopalov, Khar'kov State Pedagogical Inst imeni G. Skovoroda

"Zhur Tekh Fiz" Vol 22, No 3, pp 414-426

The interaction of electrons with an electromagnetic field is most effective when the phase velocity of the wave is much less than the speed of light.

244T53

Shows that this type of waveguide can reduce the phase velocity to about 1/20 the speed of light. Lists other advantages and some disadvantages of this waveguide. Thanks Prof A. I. Akiyezer and Ya. B. Faynberg for suggesting subject and for advice. Submitted 29 Sep 51

(EEA-56, no. 666: 2630 '53)

244T53

SHESTOPALOV, V. P.

GERM.

Theory of a Waveguide containing a Spiral, Partly Filled with a Dielectric.—W. P. Schestopalow. (*NachrTech.*, Oct. 1954, Vol. 4, No. 10, pp. 425–430.) German translation of 2884 of 1953.

SHESTOPALOV, V. P.

USSR/Mathematics - Viscous fluid circulation

FD-841

Card 1/1 : Pub. 85 - 6/14

Author : Shestopalov, V. P. (Khar'kov)

Title : Problem of the flow of a viscous fluid around a semi-infinite plate

Periodical : Prikl. mat. i mekh., 18, 445-450, Jul/Aug 1954

Abstract : Derives the necessary transformations of the Kochin equations for the circulation of a viscous fluid around a plate, and carries out the resulting numerical integration to the first and second approximation. Three references, 1 USSR (N. E. Kochin, 1949). Thanks V. L. German for suggesting the subject.

Institution : Khar'kov State Pedagogic Institute

Submitted : November 30, 1953

SHESTOPALOV, V.P.

Šestopalov, V. P. Particular solution of a problem for the diffusion boundary layer in a diffusor. Prikl. Mat. Meh. 18, 753–756 (1954). (Russian) 62

1 - F/W

L'A. étudie le problème de la couche limite plane le long de la paroi rectiligne d'un diffuseur; le liquide est constitué par un mélange et il s'agit de tenir compte de la diffusion. La complexité du système d'équations aux dérivées partielles qui gouvernent le phénomène est telle qu'on est conduit à simplifier la question, en utilisant le fait que l'épaisseur de la couche limite de diffusion est très petite. Il est remarquable que l'A. a réussi à former une solution particulière exacte du problème, exprimée au moyen des séries hypergéometriques. Le calcul de l'épaisseur de la couche limite conduit aux nombres dont l'ordre de grandeur est en accord avec les vues actuelles. *J. Kravtchenko.*

Khar'kov Pedagogical Inst.